

REMARKS

Claims 1-22 stand in this application. Reconsideration and allowance of the standing claims are respectfully requested.

Claims 1-5, 8-11, 13, 19, 20 and 22 stand rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,591,310 B1 (Johnson) in view of USPN 6,545,981 B1 (Garcia). Applicant respectfully traverses this rejection.

Claims 1-5, 11, 19, 20 and 22, either directly or indirectly, each recite language directed to a "push-push" messaging protocol. For example, claims 1-5 and 11 include a "push-push messaging layer." Claims 19, 20 and 22 include a "push-push RDMA write." At least this feature is not shown by Johnson or Garcia, whether taken alone or in combination.

As stated in the Specification, a push-push messaging protocol pushes data from an originating entity to a target entity. Once the data has been pushed to the target entity, the target may be notified of the buffer used to store the data. Message latency is significantly decreased between a pair of entities since "[a]n entity does not have to request data." Specification, Page 18, Second Paragraph.

Johnson and Garcia fail to describe a push-push messaging protocol. Johnson describes a reply descriptor to decrease the size and number of response messages sent in response to a request message. As clearly stated in Johnson:

It is the primary object of this invention to provide a method of responding over an I/O messaging passing medium to a request message and to provide an associated reply descriptor for transmission over an I/O message passing medium in response to a corresponding request message.

Johnson, Col. 5: Lines 12-16 [Emphasis Added]. Similarly, Garcia also fails to describe a push-push messaging protocol. Garcia describes a technique for responding to an error condition "if a response to any request packet is not received at the requesting node."

Garcia, Col. 1: Lines 54-67 [Emphasis Added]. Claims 1-5, 11, 19, 20 and 22 do not respond to a request message, but rather are designed to obviate the need for request messages, thereby decreasing message latency.

Since Johnson and Garcia fail to describe a push-push message protocol, these documents fail to disclose the subject matter of claims 1-5, 11, 19, 20 and 22, whether taken alone or in combination. Removal of this rejection for claims 1-5, 11, 19, 20 and 22 is therefore respectfully requested.

Claims 6, 7, 12, 14-18 and 21 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson in view of Garcia and USPN 6,370,605 B1 (Chong). Claims 8-10 and 13 discussed with respect to the previous rejection recite subject matter similar to claims 6, 7, 12, 14-18 and 21, and therefore may be more appropriately addressed with respect to this rejection. Applicant respectfully traverses this rejection.

Claims 6, 7, 14-18 and 21 recite features of a push-push messaging protocol similar to claims 1-5, 11, 19, 20 and 22 discussed previously. Consequently, Applicant submits that these claims represent patentable subject matter for at least the same reasons given for claims 1-5, 11, 19, 20 and 22. Removal of this rejection for claims 6, 7, 14-18 and 21 is therefore respectfully requested.

Independent claim 8, and dependent claims 9-13 which depend from claim 8, each recite "a messaging layer to communicate buffer management messages over the switched fabric using the first work queue pair, and to communicate RDMA write

messages over the switched fabric using the second VI work queue pair.” At least this feature is not shown by Johnson, Garcia or Chong, whether taken alone or in combination.

Johnson, Garcia and Chong all fail to disclose this limitation. As correctly noted in the Office Action, Johnson does not use separate channels for different messages. Office Action, Page 4. Similarly, Garcia also fails to disclose the use of separate channels. The Office Action states that Chong discloses the missing subject matter. Applicants respectfully disagree.

Chong fails to disclose “a messaging layer to communicate buffer management messages over the switched fabric using the first work queue pair” as recited in claims 8-13. Chong is directed to a RAID system. Assuming for a moment that Chong uses a separate control channel similar to the claimed subject matter, which Applicant submits that it does not, the control channel is used to increase the bandwidth of the data channel. Chong, Col. 8: Lines 19-26. The control channel is not used to “communicate buffer management messages.” This is consistent with the fact that Chong is a RAID system, and therefore utilizes control messages suitable for permanent memory storage. Further, Applicant is unable to discern any description of using “a first work queue pair” to transfer control information in Chong, let alone buffer management messages.

Since Johnson, Garcia and Chong all fail to describe the above-described feature, these documents fail to disclose the subject matter of claims 8-13, whether taken alone or in combination. Removal of this rejection for claims 8-13 is therefore respectfully requested.

Appl. No. 09/588,006
Amendment Dated 11/11/2003
Reply to Office Action of August 13, 2003 (Paper No. 2)

For at least the above reasons, Applicant submits that claims 1-22 recite novel features not shown by the cited documents. Further, Applicant submits that the above-recited novel features provide new and unexpected results not recognized by the cited documents. Accordingly, Applicant submits that claims 1-22 are not anticipated nor rendered obvious in view of the cited documents.

It is believed that claims 1-22 are in allowable form. Accordingly, a timely Notice of Allowance to this effect is earnestly solicited.

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Amendment Dated 11/11/2003

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The Examiner is invited to contact the undersigned at 724-933-3387 to discuss any matter concerning this application.

The Office is hereby authorized to charge any additional fees or credit any overpayments under 37 C.F.R. § 1.16 or § 1.17 to Deposit Account No. 02-2666.

Respectfully submitted,

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Under 37 CFR 1.34(a)

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage in an envelope addressed to:

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Deborah Higham

11/11/03
Date

Dated: 11/11/03

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